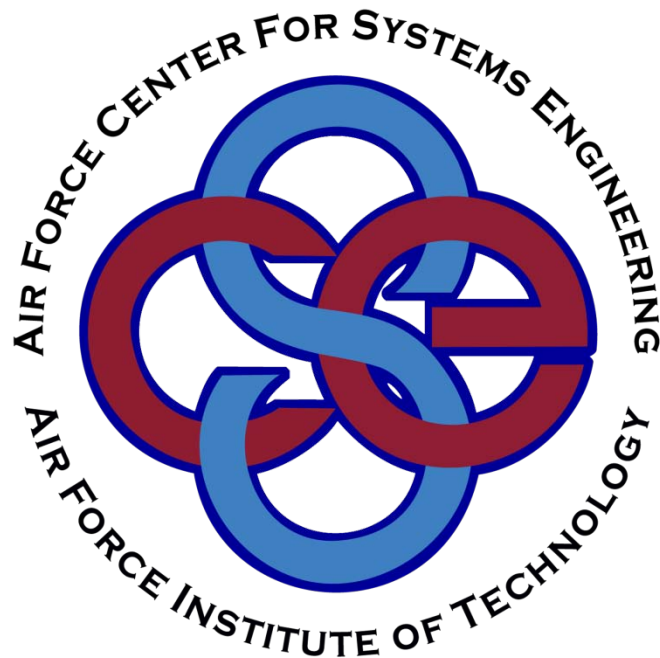




# Air Force Center for Systems Engineering Strategic Planning & Execution

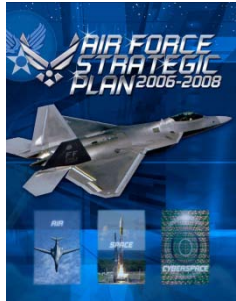


**Mr. George Mooney, SES  
Director  
AFIT/SY  
<http://www.afit.edu/cse>**

Report Documentation Page				Form Approved OMB No. 0704-0188	
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a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# Strategic Alignment



AF Vision

AF Posture Statement

AF Strategic Plan

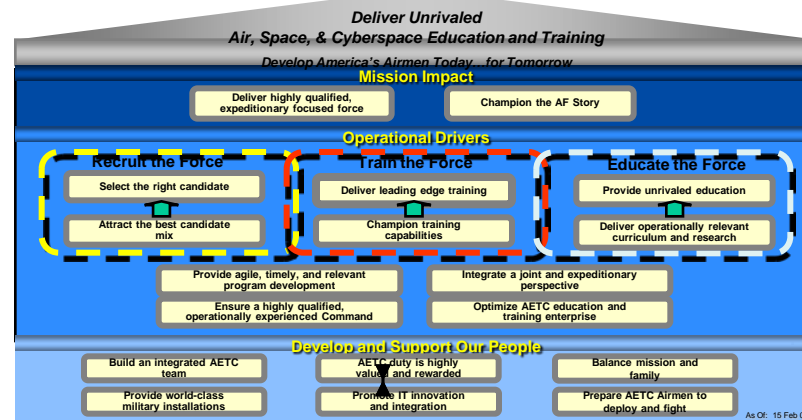
AF Roadmap

AF Priorities

Industry

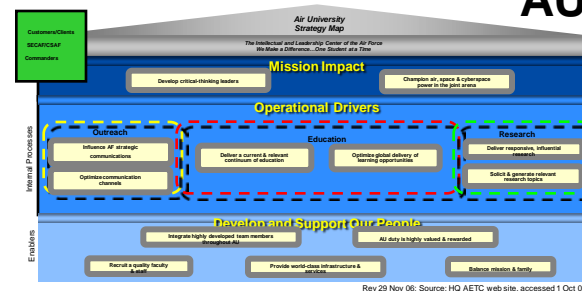
CSE Senior Council

Customers

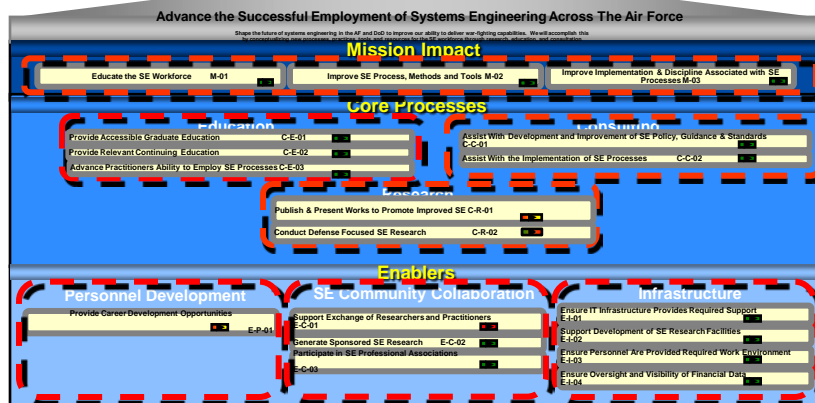


HQ AETC

AFCSF



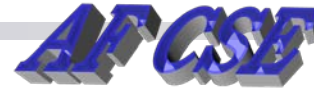
AU



Balanced Scorecard In Work



# AF Center for Systems Engineering



**VISION:** Become a national center of excellence for systems engineering, from theory to application, for the defense community.

**MISSION:** Shape the future of systems engineering in the AF and DoD to improve our ability to deliver war-fighting capabilities. We will accomplish this by conceptualizing new processes, practices, tools, and resources for the SE workforce through research, education, and consultation.

- What the AF Center for Systems Engineering offers:
  - Facilitate education through AFIT Graduate School of Engineering & Mgmt
    - Integrated Graduate Programs: PhD, MS & Certificate
    - Seminars, Workshops, Short Courses
  - Research
  - Consulting

*The Air Force's One Stop Shop For Systems Engineering*



# AFI 63-1201 and AF CSE



- **Air Education and Training Command (AETC) will:**
  - **Establish and maintain the Air Force Center for Systems Engineering (CSE) at the Air Force Institute of Technology (AFIT) to:**
    - **Promulgate and document case studies of SE implementation during concept definition, acquisition and sustainment**
    - **Facilitate collaborative SE efforts among DoD, the Services, defense agencies, other Government organizations, industry, professional organizations, and academia**
    - **Provide SE expertise for Advisory Boards & Review Panels**
    - **Provide forum to shape academic curricula for AF SE educators**



# AFI 63-1201 and AF CSE (cont.)



- **Facilitate SE education including graduate degrees, certificate programs, and Professional Continuing Education**
- **Assist with development of Air Force guidance on SE processes and practices.**
- **Recommend and coordinate with Air Force organizations on development of SE policy.**
- **Ensure that operation and maintenance training courses provide instruction on the importance of OSS&E and ORM.**



# Linking to AF Priorities

*The mission of the USAF is to fly, fight and win...in air, space and cyberspace*



= Primary SE linkage



= Secondary/Enabling SE linkage

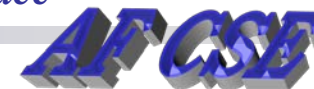
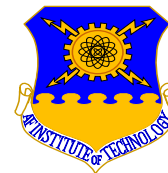
## SY Strategic Mission Objectives

		M-01: Educate SE Workforce	M-02: Improve SE Processes, Methods & Tools	M-03: Improve Implementation & Discipline Assoc w/ SE Processes
Air Force Priorities	<b><i>P1. Reinvigorate the AF nuclear enterprise</i></b>			
	<b><i>P2. Partner with the Joint and Coalition team to win today's fight</i></b>			
	<b><i>P3. Develop and care for Airmen and their families</i></b>			
	<b><i>P4. Modernize our aging air and space inventories</i></b>			
	<b><i>P5. Acquisition excellence</i></b>			



# Linking to AF Goals

*The mission of the USAF is to fly, fight and win...in air, space and cyberspace*



= Primary SE linkage



= Secondary/Enabling SE linkage

## SY Strategic Mission Objectives

M-01: Educate SE Workforce

M-02: Improve SE Processes, Methods & Tools

M-03: Improve Implementation & Discipline Assoc w/ SE Processes

### Air Force Goals

G1. Foster mutual respect & integrity



G2. Sustain air, space & cyberspace capabilities



G3. Provide persistent situational awareness



G4. Develop Joint & battle ready trained airman



G5. Improve the Total Quality Force



G6. Impl open, transparent business practices & achieve a clean audit



G7. Foster AF Smart Operations across the Total Air Force

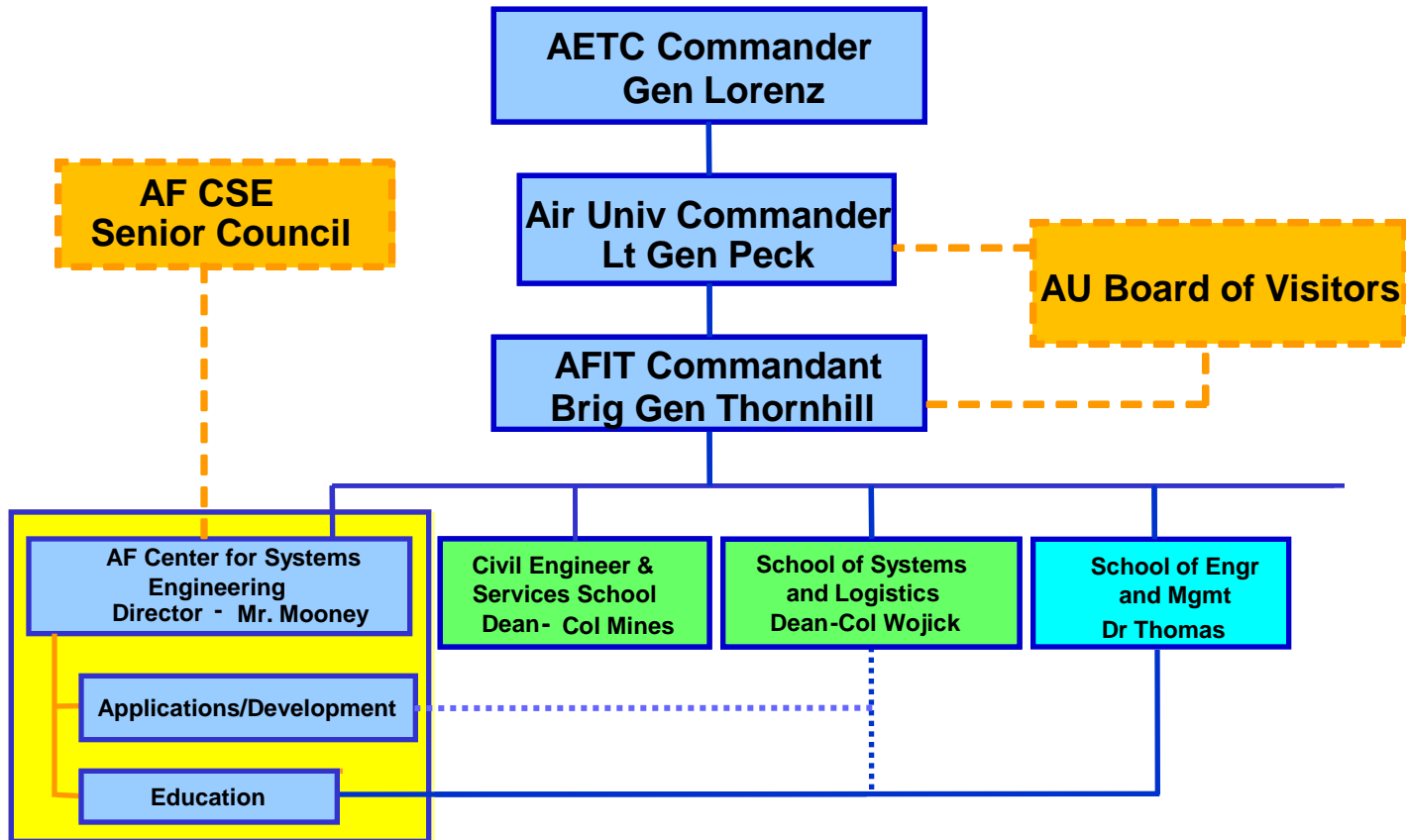


G8. Every Airman an ambassador to all we meet & serve





# AFIT Organization

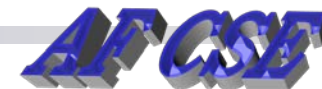
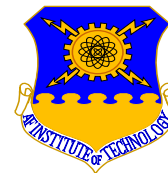


 - Continuing Education

 - Graduate School



# SY Organization



Center Positions
EN Collocated Positions
Rotational Positions
Scholar in Residence
Vacant Positions

Support Staff
GS-2210-12 IT Spec
GS-0343-11 Mgmt Analysis
SSGT Com/Web

AF Center for Systems Engineering AFIT/SY		
SES 0801	Director	
COL	Deputy	
YD-0801-03	Tech Director	
GS- 0318-07	Sec (O/A)	

Scholars
Professor - Curriculum Chair
Professor
Professor

Applications and Development Division (SYA)	
YF-0801-03 Chief	
YD-0801-03 Sys Engr	YD-0801-03 Sys Engr
YD-0801-03 Sys Engr	YD-0801-03 Sys Engr
MAJ (62/63) Sys Engr	GS-0303-06 Admin Asst
MAJ (62/63) Sys Engr	

Education/Training Div (SYE)	
LT COL Chief	
MAJ (62/63) Sys Engr	
LTC / MAJ Professor	
LTC / MAJ Professor	
MAJ Professor	
Professor	
Professor	
Professor (Contractor)	
GS-1702-07 Ed Tech	

ROTATION ENGINEERS
Civ/Mil/Industry Mix – No Sponsors



## Advance the Successful Employment of Systems Engineering Across The Air Force

Shape the future of systems engineering in the AF and DoD to improve our ability to deliver war-fighting capabilities. We will accomplish this by conceptualizing new processes, practices, tools, and resources for the SE workforce through research, education, and consultation

### Mission Impact

Educate the SE Workforce

M-01



Improve SE Process, Methods and Tools M-02



Improve Implementation & Discipline Associated with SE Processes M-03



### Core Processes

#### Education

Provide Accessible Graduate Education



C-E-01

Provide Relevant Continuing Education



C-E-02

Advance Practitioners Ability to Employ SE Processes C-E-03



#### Consulting

Assist With Development and Improvement of SE Policy, Guidance & Standards



C-C-01

Assist With the Implementation of SE Processes



C-C-02

#### Research

Publish & Present Works to Promote Improved SE C-R-01



Conduct Defense Focused SE Research



C-R-02

### Enablers

#### Personnel Development

Provide Career Development Opportunities



E-P-01

#### SE Community Collaboration

Support Exchange of Researchers and Practitioners



E-C-01

Generate Sponsored SE Research



E-C-02

Participate in SE Professional Associations



E-C-03

#### Infrastructure

Ensure IT Infrastructure Provides Required Support



E-I-01

Support Development of SE Research Facilities



E-I-02

Ensure Personnel Are Provided Required Work Environment

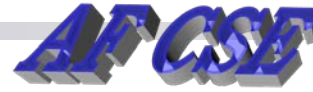


E-I-03

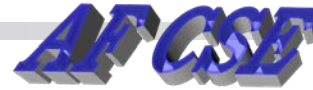
Ensure Oversight and Visibility of Financial Data



E-I-04



*QUESTIONS ?*



# ***REFERENCE SLIDES***

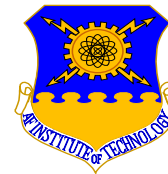
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*Strategic Objectives*

**MISSION IMPACT**



# Mission Impact Performance



**AFIT**

Objectives		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr
M-01	Educate the SE Workforce	●	● ↑	○	○
M-02	Improve SE Process, Methods and Tools	●	● ↑	○	○
M-03	Improve Implementation & Discipline Associated with SE Processes	●	●	○	○

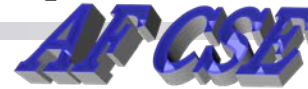
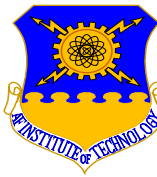
**Key:**

●	Meets Target Complies with target value	<div>Trend Arrows</div> <div>↑</div> <div>Improving</div> <div>—</div> <div>Static</div> <div>↓</div> <div>Declining</div>
● ●	Yellow to Green = Improving measure Green to Yellow = Degenerating measure	
●	Within Acceptable Limits Compliance w/acceptable levels, but not with target	
● ●	Red to Yellow = Improving measure Yellow to Red = Degenerating measure	
●	Outside Acceptable Limits Non-compliance with target	
●	No Measures / No Data Available Nothing to execute or measure at this time	

[Return to Strategy Map](#)



**Mission Impact:**  
**Educate the SE Workforce M-01**  
**Champion: Mr. Mooney, OPO: Major Havlicek**

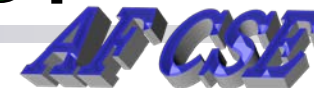
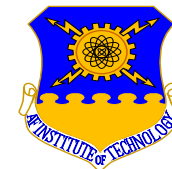
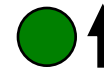


<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<p>There is a need to educate the SE workforce to improve the AF's ability to acquire, deliver and sustain systems on time and on cost which meet customer needs. The purpose of this objective is to improve systems thinking and systems engineering knowledge of those performing and/or supporting an SE process, task or activity.</p>	<ul style="list-style-type: none"><li>Continue to track Student Feedback Data</li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<p><b>Per Academic Year:</b></p> <ol style="list-style-type: none"><li>Student feedback as measured by formal survey Target: 90% positive response Threshold: 80% positive response</li><li>Number graduating from DL SE MS Target: 4 annually Threshold: 0 annually</li></ol>	<p><b>Per Academic Year:</b></p> <ol style="list-style-type: none"><li>91%</li><li>4 (first ones in AFIT history)</li></ol>





# Mission Impact: Improve SE Process, Methods & Tools M-02 Champion: Mr. Mooney, OPO: Mr. Freeman

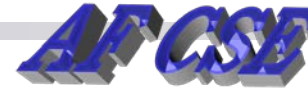
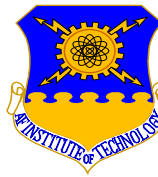


Objective	Comments / Open Actions
<p>There is a need to continually improve SE processes, methods and tools to assure optimal use of limited resources while simultaneously meeting mission requirements. The purpose of this objective is to deliver new/improved processes, methods and/or tools which better enable CSE customers to successfully implement SE. Additionally, to share best practices / lessons learned across the AF SE community.</p>	<ul style="list-style-type: none"><li>Working with DoD Best Practices Clearinghouse (BPCH)</li><li><u>SE Policy Reviews v01 grf 12 Sep 08.xls</u></li></ul>
Measure (s)	Actual Performance
<p>1. Number of SE policies reviewed/influenced as a percentage of total SE policies issued annually Target: 90% Threshold: 80%</p> <p>2. Development and fielding of an information sharing source which facilitates sharing of SE best practices / lessons learned across the AF Target: Searchable database which is available on a virtual platform and readily available to all AF SE practioners Threshold: Posting of best practices / lessons learned onto a web site which is accessible to SE practioners</p>	<p>1. 100%, 7 of 7</p> <p>2. Provided link to DoD Best Practices Clearinghouse on Center website</p> <ul style="list-style-type: none"><li>Submitted Center SE Case Study Learning Principles to BPCH</li><li>Attended BPCH CAB meeting</li><li>Participating in telecons to refine BPCH vetting process</li></ul>



# Mission Impact: Improve Implementation & Discipline Associated with SE Processes M-03

**Champion: Mr. Mooney, OPO: Mr. Ucchino**



<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<b>There is a need to improve the implementation and discipline associated with the application of SE Processes, methods and tools. The purpose of this objective is to provide consulting support to CSE customers enabling them to better apply SE.</b>	<ul style="list-style-type: none"><li>• Products Include:<ul style="list-style-type: none"><li>• Publications (In priority order)<ul style="list-style-type: none"><li>• Archival Journal Articles</li><li>• Book Chapters / Case Studies</li><li>• Magazine Articles (e.g. INCOSE INSIGHT, Defense AT&amp;L, etc)</li><li>• Refereed Conferences with Proceedings</li><li>• Invited Presentations</li></ul></li><li>• Consulting recommendations &amp; assessments, best practices, etc.</li></ul></li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<ol style="list-style-type: none"><li>1. Number of products produced per year Target: 8 Threshold: 2</li><li>2. Quality of support provided as measured by customer feedback Target: 90% positive response Threshold: 80 % positive response</li></ol>	<ol style="list-style-type: none"><li>1. 18 to date - AFMC Acq and Sust Tool Kit, ACDM Conference SE Tutorial, SYS 161 – HSI Requirements Capability, GEIA 649 CM HDBK, Bausman/Colombi AT&amp;L article, INCOSE HDBK (Append M – HSI), HSI INSIGHT Theme Edition, AF SEAM, 8 consultations, 2 new SE case studies</li><li>2. 100%, 8 of 8</li></ol>

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# *Strategic Objectives*

## **CORE PROCESSES**

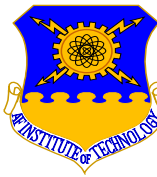
- Education
- Consulting
- Research



# Education:

## Provide Accessible Graduate Education C-E-01

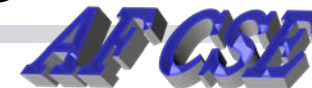
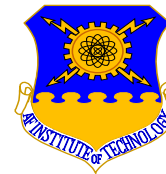
**Champion: Major Havlicek, OPO: Dr. Jacques**



<i>Objective</i>	<i>Comments / Open Actions</i>
<p><b>There is a need to provide relevant graduate education which is readily accessible to all those desiring / needing to attend SE graduate programs (Certificate, MS &amp; PhD). The purpose of this objective is to assure those seeking SE graduate education have access to in-residence and/or Distance Learning (DL) mediums to take the necessary courses and obtain research and academic advisement.</b></p>	<ul style="list-style-type: none"><li>• “Enterprise Engineering” is likely next new DL technical track to be offered</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<p><b>1. Number of technical tracks offered to DL MS students: (Currently offering “Space Systems” &amp; “Logistics”)</b> Target: 2 Threshold: 1</p> <p><b>2. Number of DL SE MS Starts per academic year (Sep-Aug)</b> Target: 30 Threshold: 10</p> <p><b>3. Number of DL SE Certificate Graduates per academic year (Sep-Aug)</b> Target: 40 Threshold: 12</p>	<p><b>1. 2</b></p> <p><b>2. 24 in AY08 (as of 9/2/08)</b></p> <p><b>3. 17 in AY08 (as of 9/2/08)</b></p>



**Education:**  
**Provide Relevant Continuing Education C-E-02**  
**Champion: Major Havlicek, OPO: Mr. Freeman**



<i>Objective</i>	<i>Comments / Open Actions</i>
<b>There is a need to provide Professional Continuing Education (PCE) to those needing to improve their working knowledge and understanding of SE. The purpose of this objective is to meet this need through PCE.</b>	<ul style="list-style-type: none"><li>• Method for data gathering developed</li><li>• Tracking system initiated <u>System Engineering PCE Courses 6 Oct 08.xls</u></li></ul>
<i>Measure (s)</i>	<i>Actual Performance (1 Oct 07-30 Sep 08)</i>
<b>Number of students completing SE-related PCE courses</b> <b>1. Live (in-residence &amp; off-site)</b> Target: 3908 Threshold: 1062 <b>2. Web-based:</b> Target: 2082 Threshold: 464 <b>3. Instructor Led Distance Learning</b> Target: 275 Threshold: 127	<b>1. 2652</b>  <b>2. 1225</b>  <b>3. 386</b>



## Education:

# Advance Practitioners Ability to Employ SE Processes C-E-03

*Champion: Major Havlicek, OPO: Mr. Mueller*



**AF CSE**

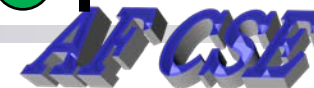
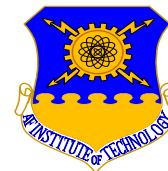
<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<p>There is a need to assure that those in the profession of SE have the skills necessary to best accomplish their jobs. Education (C-E-01) and Continuing Education (C-E-03) provide the knowledge required. The purpose of this objective is to advance CSE System Engineers ability to apply SE principles and practices to real-world processes / systems through hosting of various information exchange forums.</p>	<ul style="list-style-type: none"><li>• Qualified two new SYS 282 instructors:<ul style="list-style-type: none"><li>• Major Havlicek taught SYS 282 at Gunter AFB, Jul 08</li><li>• Charlie Garland</li></ul></li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<p>Percentage of CSE practitioners involved in presenting seminars or tutorials at external conferences/meetings or educational forums</p> <p>Target: 80% Threshold: 70%</p>	<p>1. 84%</p>



**Consulting:**

# **Assist With Development & Improvement of SE Policy, Guidance & Standards C-C-01**

**Champion: Mr. Ucchino, OPO: Mr. Bullard**



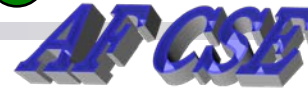
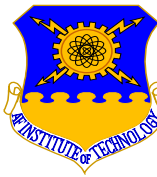
<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<b>There is a need to continually improve SE Policy, Guidance &amp; Standards to seek optimal attainment of mission requirements. The purpose of this objective is to capitalize upon SE research and direct SE practitioner interface to develop inputs to, and assist with, the improvement of SE policy guidance and standards.</b>	<ul style="list-style-type: none"><li>• Developed candidates list</li><li>• Reviewed with Center Director on 3 Apr 08<ul style="list-style-type: none"><li>• Identified top 4 candidates – SE Program Office Competencies, Integration, Interface Mgmt, Common SE Nomenclature</li></ul></li><li>• SEAM and HSI candidates already being developed</li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<b>Number of fully staffed DoD/AF policy recommendations</b>  Target: 1 recommendation formally accepted by DoD/AF for action per FY Threshold: 3 recommendations fully staffed and submitted per FY	Mike M - HSI Policy/Guidance Karen B – Common SE Nomenclature Charlie G - Program Office Competencies Randy B/Rich F - AF SEAM accepted on 11 Aug 2008 by SAF/AQ to be AF policy



## Consulting:

### Assist With the Implementation of SE Processes C-C-02

**Champion: Mr. Uchino, OPO: Mr. Garland**



<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<p><b>There is a need to continually assist practitioners to improve the successful implementation of SE processes. The purpose of this objective is to capitalize upon SE research, education “reach-back”, and internal/external Subject Matter Experts to provide consulting support to those responsible for the execution / oversight of SE processes..</b></p>	<ul style="list-style-type: none"><li>• Customers<ul style="list-style-type: none"><li>• DoD, AFMC, AFRL, AF HSI, AQR, GEIA, and NDIA</li></ul></li><li>• Table: <u>2 - Core Processes\2 - Consulting\C-C-02 Assist Implementation of SE Processes\Consulting Charts Update - 6 Feb 08.ppt</u></li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<ol style="list-style-type: none"><li>1. <b>Number of customers serviced</b> Target: 10 Threshold: 5</li><li>2. <b>Number of discrete consulting support services provided</b> Target: 15 Threshold: 6</li><li>3. <b>Customer feedback as measured by formal survey</b> Target: 100% positive response (greater than 2 on 1 - 4 scale) Threshold: 90% positive response (greater than 2 on 1 - 4 scale)</li></ol>	<ol style="list-style-type: none"><li>1. 7</li><li>2. 12</li><li>3. 100%, 8 of 8</li></ol>

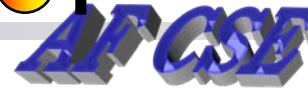
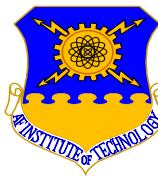





## Research:

**Publish & Present Works to Promote Improved SE C-R-01**

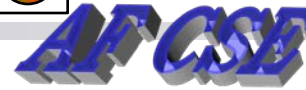
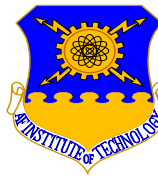
**Champion: Mr. Freeman, OPO: Major Havlicek**



<i>Objective</i>	<i>Comments / Open Actions</i>
<p>The advancement of SE will occur through research (C-R-01). The purpose of this objective is to package this research in ways that are meaningful to others and present it for their use. The intent is to reach a wide audience interested in SE through, but not limited to, collaborative space (e.g. CSE web page), journal articles, presentations to professional societies / organizations, etc.</p>	<ul style="list-style-type: none"><li>• Target &amp; threshold settings measures required</li><li>• Publications (In priority order)<ul style="list-style-type: none"><li>• Archival Journal Articles</li><li>• Book Chapters / Case Studies</li><li>• Magazine Articles (e.g. INCOSE INSIGHT, Defense AT&amp;L, etc)</li><li>• Refereed Conferences with Proceedings</li><li>• Invited Presentations</li></ul></li><li>• 13 Members supporting the CSE (7 primary, 6 matrix)</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<p>1. Percent of CSE members publishing at least one article / paper in a professional association publication</p> <p>Target: 100% CSE members published per FY Threshold: 100% CSE members submitting per FY</p> <p>2. Percent of CSE members making at least one professional SE presentation</p> <p>Target: 100% formal presentations made per FY Threshold: 80% formal presentations made per FY</p>	<p>• List of publications / presentations: </p> <p>1. Target: 47% (8 of 19) Threshold 42% (9 of 19)</p> <p>2. 53% (10 of 19)</p>



# Research: Conduct Defense Focused SE Research C-R-02 Champion: Mr. Freeman, OPO: Major Havlicek



<i>Objective</i>	<i>Comments / Open Actions</i>
<b>Research is the underpinning of the CSE's ability to successfully provide education and consulting support. Therefore, the purpose of this objective is to assure the CSE conducts and/or oversees defense focused research which advances the science and application of SE.</b>	<ul style="list-style-type: none"><li>• SE Curriculum Chair moved to ENV</li><li>• Initial work on this objective revealed student grading form which includes an area related to publishing. <u>SE Group Grade Form rev3 (2).doc</u></li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<ol style="list-style-type: none"><li>1. Number of completed FYTD war fighter defense focused research efforts conducted annually  Target: 12 Threshold: 10</li><li>2. Quality of research as measured by the ability to support publication  Target: 100% positive response Threshold: 80 % positive response</li></ol>	<ol style="list-style-type: none"><li>1. 8 GSE08M (✓), 0 GSE09M (✓), X ISE08J, 0 ISE09J (✓), 1 PhD 09S (✓), X DL Cert, 1 DL MS 08M (✓) = 10 TOTAL</li><li>2. TBD</li></ol>

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# *Strategic Objectives*

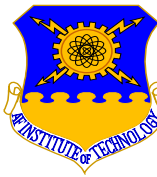
## **ENABLERS**

- Personnel Development
- SE Community Collaboration
- Infrastructure



# Personnel Development: Provide Career Development Opportunities E-P-01

**Champion: Mr. Mooney, OPO: Mr. Mooney**

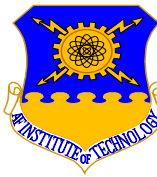


<b><i>Objective</i></b>	<b><i>Comments / Open Actions</i></b>
<p>To remain viable, faculty members and staff must remain current in the newest and best practices of SE tools, principles, processes and practices. Additionally, individuals must continue to grow through life-long learning in a myriad of areas. The purpose of this objective is to assure individuals supporting the CSE have a personal development plan and are afforded the support and opportunity to pursue the elements of this plan.</p>	
<b><i>Measure (s)</i></b>	<b><i>Actual Performance</i></b>
<p>Percent of assigned personnel with a current year supervisor approved individual development plan (IDP)</p> <p>Target: 100%</p> <p>Threshold: 80%</p>	<p>1. 18% (2 of 11)</p>



# SE Community Collaboration: Support Researchers and Practitioners E-C-01

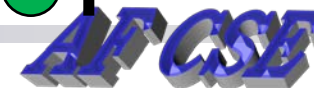
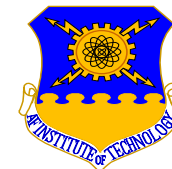
*Champion: Mr. Ucchino, OPO: TBD*



<i>Objective</i>	<i>Comments / Open Actions</i>
<b>Members of the CSE and SE faculty (EN) conduct research, support education and provide consultation. The purpose of this objective is to enhance collaboration among and between the CSE and their customers.</b>	<ul style="list-style-type: none"><li>• Senior Council Action Items No. 02–07, 03–07, 04–07 &amp; 05-07</li><li>• Working through SAF/AQR and AFMC/EN to see if we can get a centrally managed position (CMP) or AETC position assigned to Center.</li><li>• Only 4 of 6 AQR CMPs funded in FY08.</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<b>1. Number of individuals assigned to the CSE as part of the faculty or practioner rotational program. Target: 2 Threshold: 1</b>	<b>1. None assigned at this time</b> <ul style="list-style-type: none"><li>• Graduated last rotational practioner (Bowen) in Jan 08</li></ul>



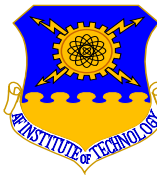
**SE Community Collaboration:  
Generate Sponsored SE Research E-C-02  
Champion: Mr. Ucchino, OPO: Maj Havlicek**




<i><b>Objective</b></i>	<i><b>Comments / Open Actions</b></i>
<p>There is a need to generate sponsored SE research to; support the war fighter with relevant research, advance the science of SE, provide interesting student topics, and to provide research funds for equipment, facilities, and research personnel. The purpose of this objective is to secure appropriate funded SE research.</p>	<ul style="list-style-type: none"><li>• <b>Automated report not available from ENR</b></li></ul>
<i><b>Measure (s)</b></i>	<i><b>Actual Performance</b></i>
<p><b>CSE-Coded Research funding received (Dollars)</b></p> <p>Target: 10% growth per year based upon base year of FY07</p> <p>Threshold: 3% growth per year based upon base year of FY07</p>	<ul style="list-style-type: none"><li>• <b><u>FY07: \$395,035</u></b></li><li>• <b><u>FY08: \$556,852</u></b></li><li>• <b>YTD FY09: \$0</b></li><li>• <b>% Growth (FY07 to FY08): 41%</b></li></ul>



# SE Community Collaboration: Participate in SE Professional Associations E-C-03 *Champion: Mr. Ucchino, OPO: Ms. Bausman*



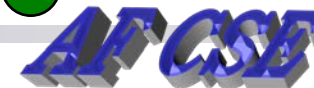
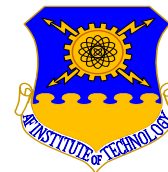
<i>Objective</i>	<i>Comments / Open Actions</i>
<p>It is essential that the CSE be a proactive participant in various SE professional associations to both influence the SE community and provide a forum through which CSE research can be communicated. The purpose of this objective is assure SE members actively participate in selected professional associations.</p>	<ul style="list-style-type: none"><li>• Ucchino on GEIA committee developing EIA-632A</li><li>• Bausman reviewing ISO 15288 and IEEE 1220 through INCOSE standards working group.</li><li>• No Center members on ISO or IEEE standards committees</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<p>Number of CSE members actively participating in the writing / updating / reviewing of SE Standards (e.g. IEEE, GEIA, and/or ISO)</p> <p>Target: 2 Threshold: 1</p>	<p>Target met.</p> 



## Infrastructure:

### Ensure IT Infrastructure Provides Required Support E-I-01

*Champion: Mr. Freeman OPO: Mr. Parks*



<i>Objective</i>	<i>Comments / Open Actions</i>
<b>IT is a critical factor in successfully accomplishing the CSE mission. The purpose of this objective is to assure that all members of the CSE have the IT equipment, software, networks, availability and support required to accomplish the CSE mission.</b>	<b><i>Detail IT inventory available at:</i></b>  <b><u><i>SY IT INV Refresh rcp 2 Oct 08.xls</i></u></b>
<i>Measure (s)</i>	<i>Actual Performance</i>
<b><i>Refresh rate</i></b> <b><i>Target: 100% IT refresh every 3 years</i></b> <b><i>Threshold: 80% IT refresh every 4 years</i></b>	<ul style="list-style-type: none"><li><b><i>86% IT refresh is within 4 years</i></b></li><li><b><i>78% refresh is within 3 years</i></b></li></ul>

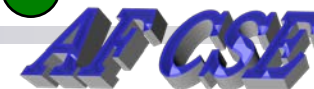
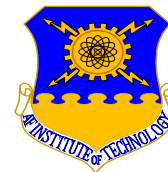




## Infrastructure:

### Support Development of SE Research Facilities E-I-02

*Champion: Mr. Freeman, OPO: Major Havlicek*



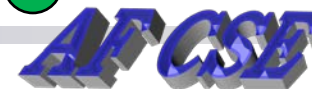
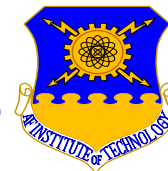
<i>Objective</i>	<i>Comments / Open Actions</i>
<p>SE research requires facilities and equipment to facilitate faculty &amp; student research. The purpose of this objective is to ensure there is adequate laboratory space and equipment to support all funded research.</p>	<ul style="list-style-type: none"><li>• Adequate laboratory facilities have been constructed and outfitted in Bldg 646</li><li>• Future: Develop lab facilities utilization plan and revised objective (offsite)</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<p>Percent of required SE laboratory space available (sq feet available /sq feet required)</p> <p>Target: 100 % Threshold: 85%</p>	<p>1. 100%</p>



## Infrastructure:

Ensure Personnel Are Provided Required Work Environment E-I-03

*Champion: Mr. Freeman, OPO: Mr. Parks*



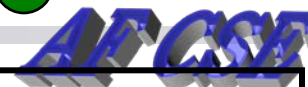
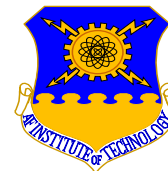
<i>Objective</i>	<i>Comments / Open Actions</i>
<b>CSE personnel require a suitable work environment in order to perform their duties. The purpose of this objective is to ensure that the physical workspace is suitable and appropriately furnished to support CSE personnel.</b>	<ul style="list-style-type: none"><li>• SY moved in to Bldg 646 by 22 Aug 08</li></ul>
<i>Measure (s)</i>	<i>Actual Performance</i>
<ol style="list-style-type: none"><li>Occupancy of the new SE building w/in 2 weeks of plan Target: On-time occupancy 4 Jul 08 Threshold: 14 Jul 08 revised to 29 Aug</li><li>Percent of personnel with open work space item needs (excluding IT, see E-E-01) Target: 0% Threshold: 10%</li></ol>	<ol style="list-style-type: none"><li>Planned for 10-29 Aug 08 Move completed 22 Aug 08</li><li>0% (Balance of furniture due NLT 1 Nov 08)</li></ol>



## Infrastructure:

### Ensure Oversight and Visibility of Financial Data E-I-04

**Champion: Mr. Freeman, OPO: Mr. Hardy/Maj Havlicek**



#### Objective

One of the critical elements of overall successful mission attainment rests on the availability of necessary funding and visibility to accurate and current financial data. The purpose of this objective is to assure that the CSE leadership has full visibility of current financial data as it relates to; the daily operation of the CSE, capital expenditures to support the CSE, and research funding and execution.

#### Comments / Open Actions

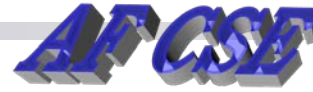
- **Travel & Supply on track**
  - SY MONTHLY BUDGET.pptm

#### Measure (s)

1. Percent of SY budgeted funds obligated annually  
Target: 100% to plan  
Threshold: 90% to plan
2. Percent of research funds (expiring in current FY) obligated  
Target: 100% to plan  
Threshold: 90% to plan

#### Actual Performance

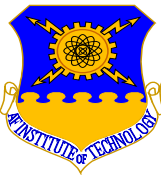
1. 100% !
2.  $1 - (\$35,595 / \$563,669) = 93.7\%$



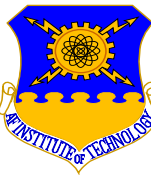
*Back Up Slides*



# CSE Customers



- Those involved in the oversight of defense community SE processes
- Those performing and/or supporting a defense SE process, task or activity



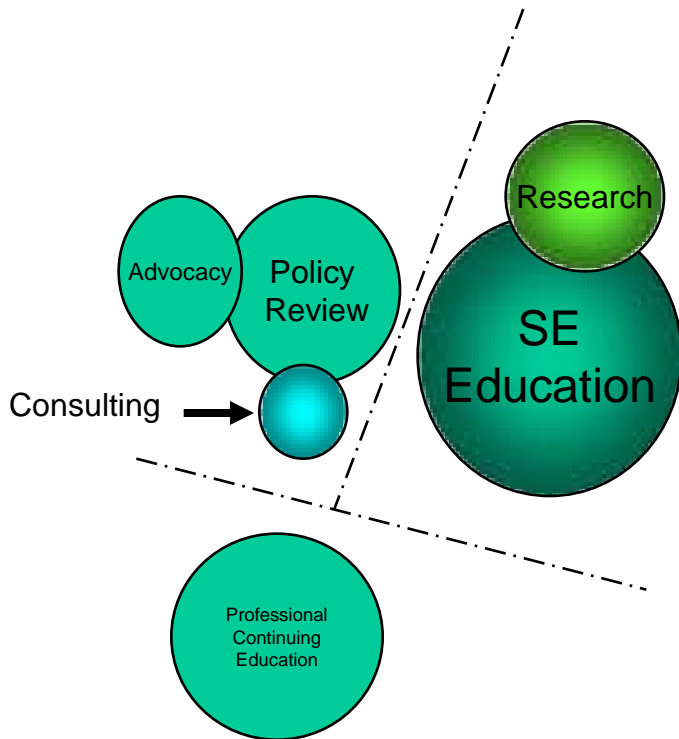
# AFIT Advancement of Systems Engineering

AFIT CSE

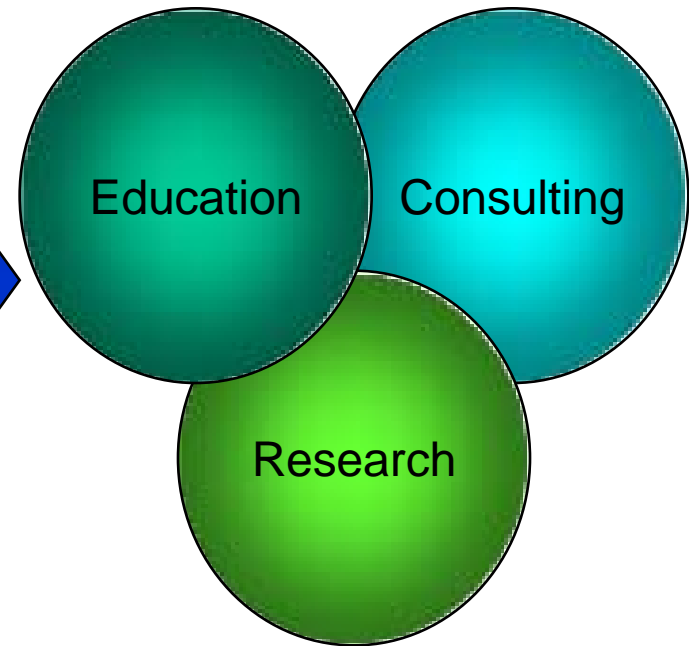
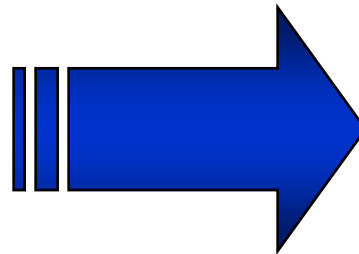
*Current to*



*Desired Future State*



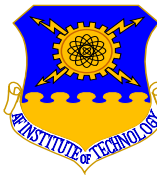
Current Environment








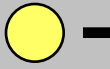






Envisioned Future Environment











# Mission Impact Performance



AFCS

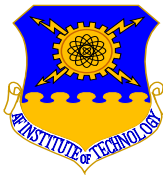
Objectives		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr
M-01	Educate the SE Workforce				
M-02	Improve SE Process, Methods and Tools				
M-03	Improve Implementation & Discipline Associated with SE Processes				

**Key:**

	Meets Target Complies with target value	Trend Arrows
 	Yellow to Green = Improving measure Green to Yellow = Degenerating measure	
	Within Acceptable Limits Compliance w/acceptable levels, but not with target	Improving ↑
 	Red to Yellow = Improving measure Yellow to Red = Degenerating measure	Static —
	Outside Acceptable Limits Non-compliance with target	Declining ↓
	No Measures / No Data Available Nothing to execute or measure at this time	



# File Structure & Naming Convention



## ■ Data File Structure

### Current BSC

#### 1 – Mission Impact

M-01 Educate...

#### 2 – Core Processes

##### 1 – Education

C-E-01 Accessible Graduate Education...

##### 2 – Consulting

##### 3 - Research

#### 3 – Enablers

##### 1 – Personnel Development

E-P-01 Provide Adequate Manning

E-P-02 Provide Career Development Opportunities

E-P-03 Facilitate Synergy...

## ■ Data File Naming Convention

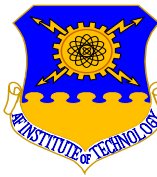
*(Title) (Version) (Initials) (DD/MMM/YY)*

*BSC CSE 2007-2008 V27 grf 25 Mar 08*

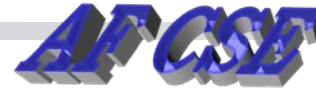




# Research



## Publish & Present Works to Promote Improved SE C-R-03



- **Objective:**

The advancement of SE will occur through research (C-R-01). The purpose of this objective is to package this research in ways that are meaningful to others and present it for their use. The intent is to reach a wide audience interested in SE through, but not limited to, collaborative space (e.g. CSE web page), journal articles, presentations to professional societies/organizations, etc.

- **Measures:**

1. Number of high quality case studies published annually

Target: 3

Threshold: 1

2. Number of CSE presentations made or articles/papers published in professional association publications or forums

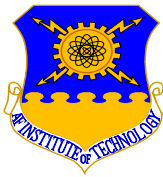
Target: One paper per SE faculty & professional staff member published per FY

Threshold: One paper per SE faculty & professional staff member submitted per FY

**Removed Feb 08**



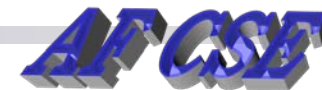
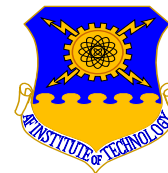
# Consulting Efforts



TOPIC	REQUESTING ORGANIZATION	STATUS
AF SE Assessment Model (AF SEAM)	AFMC/EN	Complete
Assessed SE Processes	Airborne Laser Program Office Kirtland AFB NM	Complete
SE Assessment of AFRL FLTCs	AFRL/CC	Complete
Service Oriented Architecture	HQ AFRC	Complete
Exec Info and Decision Support IT System Architectures	HQ AFRC	Complete
Harmonize CM Process Standards with SE Process Standards	GEIA G-33 CM/DM Committee	On-Going
Vet NDIA SE Effectiveness Survey Results with OSD Systemic Root Cause Analysis	OSD(AT&L)SSE / NDIA SE Division	On-Going



# Consulting Efforts



TOPIC	REQUESTING ORGANIZATION	STATUS
Reviewing Global Hawk Technical Planning and SE Processes Assessment	303 AESG	On-Going
Risk Management Tool Support	AFMC/EN	On-Going
HSI in DoDAF	SAIC	On-Going
HSI AFIT-AFRL-HPW Links	Booz Allen	On-Going
Develop AF HSI Education and Training Strategy	AF HSI Office	On-Going